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Gor'kiy Med Inst

"Byull Eksp1 Biol i Med" Vol 22, No 5, 1946, pp 13-16

White rats were adrenalectomized under ether after a fast. Blood sugar was determined in a number of them at regular intervals. Others were injected with alloxan and their blood sugars were determined. Rats which had lost only one adrenal gland showed a hyperglycemia which increased considerably after alloxan. In animals losing both adrenal glands the blood sugar was essentially normal, but injection of alloxan led to a severe and often fatal hypoglycemia. Thus it was confirmed that the initial hyperglycemia after injection of alloxan is the result of interaction of the latter with the adrenal glands. In a second experiment, rats injected with alloxan were later decapitated at various intervals and their blood injected in white mice. The blood sugar of the mice was substantially the same as in controls when the rats were killed during the hyperglycemic phase of alloxan poisoning; however, the blood of rats killed during the height of the hypoglycemic phase caused a pronounced hypoglycemia in the mice. This result indicates that during the hypoglycemic phase of alloxan diabetes there is a large amount of insulin in the blood which causes the catastrophic fall of the blood sugar.

"Alloxan Diabetes. Influence of Fat-rich Food on the Course of Diabetes in White Rats," Ya. A. Iazaris, E. R. Brzeshinskaya, Gor'kiy Med Inst

"Byull Eksp1 Biol i Med" Vol 22, No 6, 1946, pp 36-9

White rats in which diabetes was induced by alloxan were kept on a normal diet for 20 days and then on a diet containing 70% hog tallow and 30% normal feed. Immediately after initiation of the latter diet, diuresis decreased sharply and glucose was essentially absent from the urine. Return to normal diet did not see a return of glucose excretion. In another series, after diabetes was induced, the animals were fed a diet of hog tallow, lean beef, vitamins, and minerals. The fat level was increased slowly up to 70%. Diuresis was small and glucose level in the urine was very low. Return to normal diet led to increased diuresis and glucose excretion. With the high-fat, low-protein diet, ketone bodies were absent from the urine; with a high protein intake they were always present.

"Determination of Peroxidase Activity in Blood," P. V. Simakov, Gor'kiy Med Inst

"Biokhimiya" Vol 10, 1945, pp 360-3

From 0.01N indigo carmine a 0.001N solution is prepared just before use. The titer is determined by

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acidifying 0.001N indigo carmine solution with 2N  $H_2SO_4$ , and titrating with 0.001N  $KMnO_4$  until the color changes from green to a pure yellow. The oxidation is considered at an end as soon as the blue has changed to a rose-yellow color. The time necessary for the oxidation of the indigo carmine is a measure of the peroxidase activity. The method is accurate to 5%. Since the peroxidase action of the blood is related to the amount of hemoglobin, and the latter varies with different people, for purposes of comparison, the peroxidase activity is divided by the percentage of hemoglobin.

"Electroreduction of the Peptide Group in Cyclic and Open-chain Compounds. Reduction of Certain Amides and Substituted Amides," N. I. Gavrilov, A. V. Koperina, M. M. Klyuchareva, Gor'kiy Med Inst

"Bull Soc Chim" Vol 12, 1945, pp 773-9.

Behavior of amides in electroreduction is studied to determine whether cyclic and open-chain peptides can be distinguished in proteins. The electrodes are pure Pb, the anode solution is 20%  $H_2SO_4$ , the cathode solution contains  $H_2O$ , EtOH,  $H_2SO_4$ , and 0.01 M amide. Current density is 0.187 amp/sq cm at 40°. Results show that aromatic amides are reduced only when Ph is in direct combination with the C of CO. Piperazine has the same effect as Ph. Fatty acid amides are not reduced unless Me or Ph replaces the H in  $HCONH_2$  or  $AcNH_2$ . The reduction of hippuric acid is an exception. The greater ease of reduction of aromatic compounds is probably due to their greater ease of hydrolysis and the solubility of the compounds produced.

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